

**BEFORE THE
PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA
DOCKET NO. 2018-319-E**

IN THE MATTER OF:

Application of Duke Energy Carolinas, LLC
for Adjustments in Electric Rate Schedules
and Tariffs and Request for an Accounting
Order

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**SURREBUTTAL TESTIMONY OF
JUSTIN R. BARNES ON BEHALF OF
VOTE SOLAR**

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I. INTRODUCTION

1
2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND CURRENT**
3 **POSITION.**

4 A. Justin R. Barnes, 1155 Kildaire Farm Rd., Suite 202, Cary, North Carolina,
5 27511. My current position is Director of Research with EQ Research LLC.

6 **Q. DID YOU PREVIOUSLY SUBMIT DIRECT TESTIMONY IN THIS**
7 **PROCEEDING?**

8 A. Yes. I submitted direct testimony on February 26, 2019 and errata to my direct
9 testimony on March 7, 2019.

10

II. PURPOSE AND SCOPE

12 **Q. WHAT IS THE PURPOSES OF YOUR SURREBUTTAL TESTIMONY?**

13 A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony
14 filed by Duke Energy Carolinas' ("DEC" or "the Company") witnesses Janice
15 Hager and Michael Pirro regarding the validity of the Minimum System Method
16 of classifying distribution system costs for the purposes of cost allocation and rate
17 design, and the establishment of a reasonable residential basic facilities charge
18 ("BFC"). I also respond to Company Witness Pirro's new proposal that Schedule
19 RS customers take service under rates with a demand component that recovers all
20 non-minimum system distribution costs.¹

¹ Rebuttal Testimony of Michael Pirro ("Pirro Rebuttal"), p. 10, lines 1-5.

1 **Q. HOW IS YOUR SURREBUTTAL TESTIMONY ORGANIZED?**

2 A. In Section III I address the validity of the Minimum System Method, which forms
3 the basis for the Company's proposed residential BFC, primarily in response to
4 Company Witness Hager. In Section IV I respond to the Company's assertions
5 regarding proper amount of the residential BFC, and a new residential BFC
6 proposal made by Company Witness Pirro. In Section V I address Company
7 Witness Pirro's residential demand rate proposal. Section IV contains my
8 concluding remarks and recommendations.

9

10 **III. THE VALIDITY OF THE MINIMUM SYSTEM METHOD**

11 **Q. PLEASE DESCRIBE THE MINIMUM SYSTEM METHOD AND HOW**
12 **DEC USES IT IN ITS COST OF SERVICE STUDY.**

13 A. As I described in my direct testimony, the Minimum System Method postulates
14 that some portion of the distribution system shared by all customers is customer-
15 related and therefore allocable to customer classes based on the number of
16 customers in a given class. In other words, a certain level of investment in the
17 shared system would be required to connect a customer even if that customer had
18 a minimal load. In practice, this results in a portion of costs in FERC Accounts
19 364-368, involving poles, overhead and underground conductors, and line
20 transformers being classified as customer-related. Its use also has downstream
21 effects beyond distribution cost allocation because other dynamic allocators are
22 influenced by the results. The Company uses this method in its cost of service

1 study to calculate class allocations and the proposed \$28.00/month residential
2 BFC.

3 In my direct testimony I described the methodological failings of the
4 Minimum System Method, summarized below:

5 1) It relies on a flawed premise that a customer with a zero or minimal load
6 would desire a connection to the distribution system.

7 2) It tends to over-allocate distribution costs to highly populous rate classes,
8 because a minimum system is typically capable of serving a considerable
9 amount of demand, resulting in this demand being assigned largely to the
10 highly populous classes, which then receive a further allocation of remaining
11 demand-related costs based on the full class demands.

12 **Q. WHAT RECOMMENDATIONS DID YOU MAKE IN YOUR DIRECT**
13 **TESTIMONY REGARDING THE USE OF THE MINIMUM SYSTEM**
14 **METHOD?**

15 A. I recommended that the Public Service Commission ("Commission") reject its use
16 for both cost allocation and rate design, and instead rely on the Basic Customer
17 Method to define customer-related costs. The Basic Customer Method confines
18 customer-related costs to those associated with metering, billing and collection,
19 customer service, and the customer's service drop.

20 **Q. HOW DOES THE COMPANY JUSTIFY THE USE OF THE MINIMUM**
21 **SYSTEM METHOD AND RESPOND TO YOUR RECOMMENDATIONS?**

22 A. In discussing the validity of the Minimum System Method, in both direct
23 testimony and rebuttal testimony, Company Witness Hager relies primarily on the

1 National Association of Regulatory Commissioners Electric Utility Cost
 2 Allocation Manual ("NARUC CAM").² In rebuttal testimony Witness Hager also
 3 contends that Dr. James Bonbright, in his seminal work *Principles of Public*
 4 *Utility Rates*, lends support to the Minimum System Method by way of a
 5 statement that "the exclusion of minimum system costs from demand-related costs
 6 is on "much firmer ground" than its exclusion from customer costs."³ This
 7 assertion was made in response to statements in my direct testimony relating Dr.
 8 Bonbright's discussion of the matter, where he characterizes the costs of a
 9 minimum distribution system as "unallocable".⁴

10 **Q. HOW DO YOU RESPOND THE COMPANY WITNESS HAGER'S**
 11 **CONTENTION THAT THE NARUC CAM SUPPORTS THE COMPANY'S**
 12 **USE OF THE MINIMUM SYSTEM METHOD OF CLASSIFYING**
 13 **DISTRIBUTION COSTS?**

14 **A.** I do not disagree that the NARUC CAM does suggest that some distribution costs
 15 could be considered customer-related. However, Company Witness Hager fails to
 16 appreciate that the NARUC CAM also characterizes such a practice as the subject
 17 of an "unresolved argument" among analysts.⁵ In addition, the NARUC CAM
 18 also notes that "minimum-size distribution equipment has a certain load-carrying
 19 capability, which can be viewed as a demand-related cost."⁶ Witness Hager also

² Rebuttal Testimony of Janice Hager ("Hager Rebuttal"), p. 8, lines 9-17.

³ Hager Rebuttal, p. 8, lines 3-7.

⁴ Dr. James Bonbright, *Principles of Public Utility Rates*, p. 348, Columbia University Press (1961).

⁵ NARUC. Electric Utility Cost Allocation Manual. p. 136. 1991.

⁶ *Id.*, p. 95.

1 fails to address the fact that a subsequent NARUC-commissioned report published
 2 nearly a decade later found that more than thirty states (at the time of the report)
 3 used the Basic Customer Method of classifying distribution costs rather than the
 4 Minimum System Method.⁷

5 Ultimately the fact that the Basic Customer Method is not well-
 6 represented in the NARUC CAM is not indicative of its broader level of
 7 acceptance, which is higher than the acceptance of the Minimum System Method
 8 and associated variations. Earlier draft versions of the NARUC CAM and related
 9 discussions included the Basic Customer Method in addition to the Minimum
 10 System Method and Zero-Intercept Method as methodologies for classifying
 11 distribution costs. The Basic Customer Method was apparently removed from the
 12 final version, eliciting concerns by least one state regulatory agency. Surrebuttal
 13 Exhibit JRB-1 contains a letter from the Washington Utilities and Transportation
 14 Commission (“UTC”) voicing the UTC’s concerns about the omission of the
 15 Basic Customer Method from the NARUC CAM. Among other things, the letter
 16 notes that UTC staff believes it to be the most common approach taken by
 17 regulators throughout the country, citing the states of Arizona, Iowa, and Illinois
 18 as states that have explicitly rejected the Minimum System Method and Zero-
 19 Intercept Method.

⁷ F. Weston, et al., *Charges for Distribution Service: Issues in Rate Design*, p. 19, REGULATORY ASSISTANCE PROJECT (2000), available at: <http://pubs.naruc.org/pub/536F0210-2354-D714-51CF-037E9E00A724>.

1 **Q. HAVE OTHER STATES ALSO REJECTED THE USE OF THE**
 2 **MINIMUM SYSTEM METHOD OR THE MINIMUM INTERCEPT**
 3 **METHOD IN RECENT YEARS?**

4 A. Yes. As I described in my direct testimony, legislators in Connecticut directed the
 5 Public Utilities Regulatory Authority (“PURA”) to utilize the Basic Customer
 6 Method in 2015.⁸ Likewise, in 2018 regulators in Colorado directed Black Hills
 7 Energy to eliminate the Minimum Intercept Method from its cost of service study
 8 in the utility’s most recent general rate case.⁹

9 **Q. IS COMPANY WITNESS HAGER’S CHARACTERIZATION OF**
 10 **BONBRIGHT’S VIEWS ON CUSTOMER COST CLASSIFICATION AN**
 11 **ACCURATE REPRESENTATION OF HIS THOUGHTS ON THE**
 12 **MATTER?**

13 A. No. Company Witness Hager selectively truncates Dr. Bonbright’s writing in a
 14 manner that distorts the meaning. First, in discussing distribution cost
 15 classification and a hypothetical minimum-sized distribution system, Dr.
 16 Bonbright states “the inclusion of the costs of a minimum-sized distribution
 17 system among the customer-related costs seems to me clearly indefensible.”¹⁰
 18 Witness Hager relates subsequent text where Dr. Bonbright avers that minimum

⁸ Connecticut Public Act 15-5, June Special Session, *available at*:
https://www.cga.ct.gov/asp/cgabillstatus/CGAbillstatus.asp?selBillType=Bill&bill_num=1502&which_year=2015

⁹ Colorado Public Utilities Commission. Docket No. 17AL-0477E. Decision No. C18-0445. June 15, 2018, *available at*:
https://www.dora.state.co.us/pls/efi/efi_p2_v2_demo.show_document?p_dms_document_id=887641

¹⁰ James Bonbright, *Principles of Public Utility Rates*, Columbia University Press, 1961, p. 348.

1 system costs ought also to be excluded from demand-related costs (“the exclusion
 2 of minimum system costs from demand-related costs is on “much firmer ground”
 3 than its exclusion from customer costs.”¹¹). However, she fails note that Dr.
 4 Bonbright closes the loop on the matter by concluding that the costs of a
 5 minimum-sized distribution system are “strictly unallocable”, while further
 6 cautioning against rendering the category of customer costs a “dumping ground”
 7 for costs that defy easy categorization.¹²

8 **Q. WHAT ARE THE MOST APPROPRIATE CONCLUSIONS TO REACH**
 9 **FROM YOUR DISCUSSION OF THE NARUC CAM AND DR.**
 10 **BONBRIGHT’S WORK?**

11 A. The most reasonable conclusions are: (1) the costs of a minimum-sized system are
 12 not customer-related, and (2) a majority of states recognize this by limiting the
 13 customer-related classification to the costs of meters, billing and collection,
 14 customer service, and customer service drops, and classifying 100% of the costs
 15 associated with the shared distribution system as demand-related. How to allocate
 16 those costs is apparently a matter of debate in Dr. Bonbright’s thinking, but he
 17 clearly believed that a customer-related classification is inappropriate. A
 18 conclusion that the full scope of distribution costs are demand-related makes the
 19 most sense because a hypothetical minimum-sized distribution system is typically
 20 capable of supporting a sizable amount of customer demand.

¹¹ Hager Rebuttal, p. 8, lines 3-7.

¹² James Bonbright, *Principles of Public Utility Rates*, Columbia University Press, 1961, p. 348.

1 **Q. IN LIGHT OF THE CONCERNS YOU HAVE RAISED ABOUT THE**
 2 **OVERALLOCATION OR DOUBLE-COUNTING OF DISTRIBUTION**
 3 **COSTS TO POPULOUS RATE CLASSES, IS THERE EVIDENCE**
 4 **INDICATING THAT THE COMPANY’S MINIMUM SYSTEM WOULD**
 5 **SUPPORT A SIGNIFICANT AMOUNT OF DEMAND?**

6 **A. Yes. Company Witness Hager voices confusion about my contention that the**
 7 **Minimum System Method causes to be double-counted.¹³ I made this statement in**
 8 **my direct testimony in reference to the fact that, as the NARUC CAM observes, a**
 9 **minimum-sized distribution system has a load carrying capability that can be**
 10 **viewed as a demand-related cost. A populous class such as the residential class is**
 11 **allocated the bulk of these demand costs by the Minimum System Method, while**
 12 **also receiving an allocation of the remaining demand-costs based on full class**
 13 **demand. I referred to this as “double-counting”, which I believe is an accurate**
 14 **description, though the effect could also be described as “double-allocation” or**
 15 **“over-allocation”.**

16 Such an effect is most easily visible in the context of line transformers. If
 17 every one of DEC’s roughly 709,000 customers had a minimal demand consisting
 18 of a 100-Watt light bulb, the system load would be roughly 70.9 MW, on the
 19 order of 1% of the Company’s South Carolina retail non-coincident peak load of
 20 roughly 6,988 MW.¹⁴ The Company’s minimum-sized system is composed of

¹³ Hager Rebuttal, p. 14, lines 7-9.

¹⁴ DEC response to VS 1-20(a), Attachment entitled “VS DR 1-20 DEC_Unit Cost Study”. Attached in Surrebuttal Exhibit JRB-2, p. 5.

1 approximately 211,000 15-kVa line transformers.¹⁵ Thus the combined kVa rating
 2 of the “minimum-sized” system is roughly 3,175 MVA. This amounts to 45.4% of
 3 South Carolina retail non-coincident peak load. Clearly, a system composed of the
 4 minimum-sized line transformers would support significant demand in excess of a
 5 scenario where each customer possesses only a minimal lighting load.

6 **Q. DOES COMPANY WITNESS HAGER TAKE ISSUE WITH ANY OTHER**
 7 **PORTIONS OF YOUR DIRECT TESTIMONY THAT YOU WISH TO**
 8 **RESPOND TO?**

9 A. Yes. Witness Hager states that my derivation of the costs for a grid-independent
 10 solar and battery storage system that would provide the same level of service as
 11 system capable of supporting a minimal lighting load is irrelevant because the
 12 Company’s cost of service study focuses only on allocating embedded costs.¹⁶

13 **Q. HOW DO YOU RESPOND TO THIS CRITICISM?**

14 A. Company Witness Hager misses the points I am making based on this analysis.
 15 My first point, as I discuss at length in my testimony, is that the Minimum System
 16 Method is increasingly anachronistic. It rests on a hypothetical “what if” scenario
 17 (i.e., a customer with a minimal service need) that I have demonstrated would not
 18 occur in the modern day. When the central element of such a “what if” scenario is
 19 at best highly implausible, one should question the conceptual framework of the
 20 method itself.

¹⁵ DEC response to VS 1-18, Attachment entitled “VS DR 1-18 DEC MinSys_1217”.
 Attached in Surrebuttal Exhibit JRB-2, p. 3.

¹⁶ Hager Rebuttal. p. 13, lines 19-21 and p. 14, lines 1-3.

Second, as I observed in the context of principles of utility ratemaking, when a natural monopoly such as electric distribution service is present, regulation should function as a substitute for competition. In this instance, the Company is seeking a residential BFC in an amount that would be uncompetitive with other options that provide the same hypothetical level of service. This also points to fundamental flaws in the methodology. Customers connect to the grid in order to receive service for their full demands. Even if they desired the minimal level of service contemplated by the Minimum System Method, they would not elect to take that service from the Company at the rates the Company proposes to charge.

IV. THE RESIDENTIAL BFC

1 **Q. PLEASE SUMMARIZE THE COMPANY’S RESPONSES TO YOUR**
 2 **DIRECT TESTIMONY REGARDING THE RESIDENTIAL BFC.**

3 A. Company Witness Pirro contends that my recommended residential BFC would
 4 create inaccurate price signals, cause high usage customers to subsidize low usage
 5 customers, and result in low usage customers failing to pay the costs associated
 6 with serving them.¹⁷ Company Witness Hager raises a similar concern, that
 7 moving costs from the customer classification to other classifications would result
 8 in customers such as those with summer homes or on-site solar installations not
 9 paying their “fair share of the costs of distribution facilities.”¹⁸ Further portions of
 10 Witness Pirro’s rebuttal testimony on the residential BFC:

- 11 • State that he “believes there is merit” to the concerns raised by myself and
 12 several other witnesses regarding the lack of gradualism present in the initially
 13 proposed residential BFC, and suggest a “possible” alternative approach that
 14 would result in a residential BFC of \$18.15/month.¹⁹
- 15 • Opine that the proposed residential BFC would not disproportionately harm
 16 low-income customers.²⁰

¹⁷ Pirro Rebuttal, p. 6, lines 8-15.

¹⁸ Hager Rebuttal, p. 6, lines 4-23, quote at lines 21-22.

¹⁹ Pirro Rebuttal, p. 10, lines 8-21.

²⁰ *Id.*, p. 6-7.

1 **Q. HOW SHOULD THE COMMISSION VIEW THE COMPANY'S**
2 **ARGUMENT THAT YOUR RESIDENTIAL BFC RECOMMENDATIONS**
3 **WOULD CAUSE LOW USAGE CUSTOMERS TO BE SUBSIDIZED BY**
4 **HIGH USAGE CUSTOMERS?**

5 A. The Commission should give this argument no weight because the Company has
6 not presented any supporting evidence or analysis. The single most basic question
7 that must be asked when evaluating such an assertion is "What is the definition of
8 a low usage customer?" Yet when Vote Solar asked this simple question to
9 Company Witness Hager based on similar statements contained in her direct
10 testimony, the Company's response stated "the use of the term "low use
11 customer" was meant to be general in nature" and was not intended to refer to any
12 specific usage threshold.²¹ Cost of service is a discipline of evidence and
13 numbers, not broad assertions or generalizations. Statements for which the
14 Company cannot respond to the most basic interrogatory with a substantive
15 answer should not be considered credible.

16 **Q. IS THERE MERIT TO COMPANY WITNESS HAGER'S ASSERTION**
17 **THAT RESIDENTIAL NET METERING CUSTOMERS ARE AVOIDING**
18 **PAYING THEIR "FAIR SHARE" OF SERVICE COSTS?**

19 A. No. In fact based my own calculations there is reason to believe that the value of
20 residential net metering production, in the form of reduced allocations of costs
21 assigned based on coincident peak contribution and the marginal time-varying
22 value of customer-generated energy, exceeds the retail rate that these customers

²¹ DEC response to VS 1-4(a). Attached in Surrebuttal Exhibit JRB-2, p. 1.

1 avoid. In my direct testimony (as updated by subsequent errata) I estimated that
 2 residential net metering customers produced a \$3.1 million benefit to the
 3 residential class due to reductions in allocations based on coincident peak
 4 demand. Based on this estimated cost of service benefit spread across annual
 5 estimated energy production from these same systems, plus the Company's
 6 calculated marginal time-varying energy costs from its 2017 fuel cost proceeding,
 7 the value of that generation translates to roughly 12.2 cents/kWh.²²

8 By way of comparison, if the revenue requirement for Schedule RS and
 9 Schedule RE customers combined was spread across energy sales *with a zero*
 10 *residential BFC*, the total retail energy rate would be 11.85 – 12.00 cents/kWh
 11 depending on whether the total revenue requirement is based on cost of service
 12 without or with the use of the Minimum System Method. At a \$10/month
 13 residential BFC, the retail volumetric rate would be 10.90 – 11.04 cents/kWh,
 14 again varying by whether a minimum distribution system assumption is used.

15 **Q. DO YOU AGREE THAT COMPANY WITNESS PIRRO'S "POSSIBLE**
 16 **APPROACH" TO SETTING THE RESIDENTIAL BFC IS**
 17 **REASONABLE?**

18 A. No. Witness Pirro's derivation is based on increasing the residential BFC by 50%
 19 of the difference between the current charge of \$8.29/month and the Company's
 20 minimum-system derived theoretical residential BFC of \$28.00/month.²³ This
 21 would result in an increase of \$9.86/month, to \$18.15/month. The \$28.00/month

²² Marginal avoided energy costs from Commission Docket No. 2017-3-E. Direct
 Testimony of Jason Martin. p. 8, Table 4. July 28, 2017.

²³ Pirro Rebuttal, p. 10, lines 16-21.

1 amount hinges on the use of the Minimum System Method, which as I have
2 discussed at length, should not be utilized in the Company's cost of service study.
3 Thus the amount of the increase under this approach is biased by the inappropriate
4 upper benchmark. My own derivation of a reasonable maximum residential BFC
5 is \$11.64/month. Even that amount may be overstated because as discussed in my
6 direct testimony, this amount includes the full cost of the Customer Connect
7 platform as customer-related, even though Customer Connect is intended to also
8 serve energy and demand-related use cases, and it was not possible to fully
9 evaluate general and administrative costs that should not be included in a
10 customer charge.

11 I also disagree that such an increase is a reasonable adherence to the
12 principle of gradualism. Such an increase would still be the largest adopted for an
13 investor-owned utility ("IOU") in monetary terms in rate cases filed since July
14 2014. The next largest is a \$7.69/month increase allowed for Alaska Power in
15 October 2017. It would also more than double the current residential BFC, a
16 percentage increase of 119%, which exceeds all other increases in percentage
17 terms except one. That single example is for Duke Energy Kentucky, for which an
18 increase from \$4.50/month to \$11.00/month (144%) was authorized in 2018. The
19 Kentucky result though, is far more consistent with the national average
20 residential customer charge of \$10.42/month.

1 **Q. HOW DO YOU RESPOND TO COMPANY WITNESS PIRRO'S**
 2 **CONTENTION THAT RESIDENTIAL BFC INCREASES WOULD NOT**
 3 **DISPROPORTIONATELY HARM LOW-INCOME CUSTOMERS?**

4 **A.** Witness Pirro provided a chart purporting to illustrate that low-income customers
 5 would not be disproportionately harmed by the Company's proposed BFC,
 6 showing a wide range of average monthly usage among low-income customers
 7 (\$30,000 or less in annual household income).²⁴ The Commission should give no
 8 weight to Witness Pirro's assertions associated with this figure. When asked, the
 9 Company could not provide the underlying data necessary to reproduce the graph
 10 and perform more than a visual evaluation. Vote Solar requested all data
 11 associated with the production of this figure, but the Company's response did not
 12 include monthly usage data, a core element of the figure and the basis for Witness
 13 Pirro's assertions.²⁵

14 Furthermore, based on visual inspection alone, the figure appears to show
 15 that a majority of low-income customer bills are for usage below the residential
 16 class average. The class average generally defines the usage threshold at which a
 17 customer is indifferent to whether revenues are collected via a fixed monthly
 18 charge or a volumetric charge. If the percentage of low-income customers with
 19 average usage below the class average is larger than the percentage with above
 20 average usage, the proposed residential BFC would disproportionately adversely

²⁴ Pirro Rebuttal, p. 7, un-numbered figure between lines 2 and 3.

²⁵ DEC response to VS 8-1(a), Attachment labeled "Vote Solar Data Request 8-1".
 Attached in Surrebuttal Exhibit JRB-2, p. 7.

1 impact low-income customers because a majority are made worse off by increases
2 in the residential BFC.

3 **Q. IN THE HYPOTHETICAL, IF A MODEST MAJORITY OF LOW-**
4 **INCOME CUSTOMERS ARE MADE BETTER OFF BY LOWER FIXED**
5 **CHARGE RATES, DOES THAT NOT ALSO MEAN THAT A**
6 **SIGNIFICANT MINORITY WOULD BE MADE WORSE OFF?**

7 A. It does, but high fixed charges coupled with lower usage charges are a poor
8 solution for addressing the needs of those high usage customers. For one, in this
9 hypothetical scenario higher fixed charges would be punitive on a group of
10 customers that is larger than the group they help. Second, inordinately high usage
11 can be addressed through targeted energy efficiency initiatives. Such a strategy
12 can produce outcomes that leave all customers better off, rather than just helping
13 some at the expense of others.

14
15 **V. DEMAND CHARGES FOR RESIDENTIAL CUSTOMERS**

16 **Q. PLEASE SUMMARIZE COMPANY WITNESS PIRRO'S PROPOSAL TO**
17 **ESTABLISH A DEMAND CHARGE FOR SCHEDULE RS CUSTOMERS.**

18 A. Witness Pirro's proposal is only vaguely defined, stating that the Company should
19 revise Schedule RS to establish a demand component that recovers all distribution
20 costs not reflected as customer-related by the Minimum System Method.²⁶ While
21 Witness Pirro's rebuttal testimony refers specifically to Schedule RS customers,
22 in response to an information request, the Company indicates that if approved by

²⁶ Pirro Rebuttal, p. 10, lines 1-5.

1 the Commission, demand rates would apply to all residential rate schedules.²⁷ The
 2 basis for this proposal is Mr. Pirro's opinion that cost causation is best served by
 3 recovering demand-related costs through demand charges.²⁸

4 **Q. DO ANY OTHER IOUS IN THE COUNTRY INCLUDE DEMAND**
 5 **CHARGES UNDER STANDARD OR MANDATORY RESIDENTIAL**
 6 **RATE SCHEDULES?**

7 A. No. I have researched this topic exhaustively and demand charges within standard
 8 residential rates are not present for any IOU. A number of utilities offer optional
 9 residential demand rates, including DEC, but none make them mandatory for the
 10 entire residential class as the Company proposes.

11 **Q. ARE DEMAND CHARGES CONSISTENT WITH COST CAUSATION**
 12 **FOR RESIDENTIAL CUSTOMERS?**

13 A. It is necessary to speak in generalities here because the details of the Company's
 14 proposal are sparse. That said, as typically practiced in the form of charges based
 15 on monthly non-coincident peak demand, they are not aligned with cost causation.
 16 Demand-related costs are caused by customer contributions to peaks at different
 17 levels of the system. A non-coincident demand charge does not reflect the time-
 18 varying nature of demand that causes these costs, or load diversity.²⁹ For
 19 customers with consistent loads that tend to correspond to peak times, the
 20 inaccuracies may be tolerable. Such is not true for the residential class, as

²⁷ DEC response to VS 8-3(a). Attached in Surrebuttal Exhibit JRB-2, p. 9.

²⁸ Pirro Rebuttal, p. 10, lines 1-5.

²⁹ Load diversity refers to the fact that the sum of non-coincident peak loads of a group of individual customers is less than the maximum load that the same group of customers places on the system because the individual customer peak loads occur at different times.

1 individual customer loads tend to be highly variable over the course of a day,
2 month, or season. Furthermore, demand charges are blunt instruments that fail to
3 capture how much a customer contributes *on average* to the peaks that drive costs,
4 since billing demand is typically measured at time scales ranging from 15 minutes
5 to an hour.

6 **Q. DO RESIDENTIAL CUSTOMERS CURRENTLY PAY FOR THE COSTS**
7 **ASSOCIATED WITH THE DEMAND THEY PLACE ON THE**
8 **DISTRIBUTION SYSTEM?**

9 A. Yes, they simply do so based on their average demands because volumetric rates
10 effectively spread demand-related costs across all hours, or in the case of time-
11 varying rates, the hours that correspond to peak and off-peak periods.

12 **Q. BEYOND COST CAUSATION, ARE THERE OTHER REASONS THAT**
13 **MANDATORY DEMAND RATE DESIGNS ARE NOT USED IN**
14 **RESIDENTIAL RATES?**

15 A. Yes. There is a general acknowledgement that for residential customers, demand
16 rates effectively act as a fixed charge because most residential customers are
17 relatively unsophisticated and do not understand them. Moreover even customers
18 do possess a conceptual understanding, it is likely that the vast majority do not
19 have the ability manage their demands in the same way that a larger, more
20 sophisticated customers can.

1 **Q. WOULD THE COMPANY'S PROPOSAL LEAD TO A MORE**
2 **ECONOMICALLY EFFICIENT RATE STRUCTURE FOR**
3 **RESIDENTIAL CUSTOMERS?**

4 A. No. Economic efficiency is achieved by sending an accurate price signal that
5 customers are equipped to respond to. As I discuss above, as traditionally
6 implemented, demand charges are not consistent with cost causation for
7 residential customers, thus the price signal is not accurate. Second, rates only
8 produce more economically efficient outcomes if customers can respond to them.
9 If customers cannot respond, a new price signal just creates a different set of
10 winners and losers without increasing economic efficiency.

11 **Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION**
12 **REGARDING WITNESS PIRRO'S RESIDENTIAL DEMAND CHARGE**
13 **PROPOSAL?**

14 A. The Commission should reject the proposal. As a threshold matter, it would be
15 inappropriate to consider a new proposal that contemplates dramatic changes to
16 residential rate structure at this stage of the proceeding. Furthermore, the proposal
17 itself is ill-defined and lacks anything resembling the level of detail and
18 evidentiary support necessary to determine whether it would produce just and
19 reasonable rates and achieve the proper balance of ratemaking objectives.

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21

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VI. CONCLUSION

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2 **Q. DOES ANY INFORMATION PROVIDED BY THE COMPANY IN ITS**
3 **REBUTTAL CHANGE ANY OF THE RECOMMENDATIONS YOU**
4 **MADE IN YOUR DIRECT TESTIMONY?**

5 A. No, my initial recommendations are unchanged. However, I additionally
6 recommend that the Commission disregard Company Witness Pirro's proposal to
7 establish a demand charge for residential customers. Beyond the fact that it would
8 be inappropriate to consider such a significant new rate design proposal at this
9 stage of the proceeding, the proposal itself is unprecedented and vaguely defined,
10 and the Company has not provided any substantive analysis of why it is needed
11 and how it would impact customers.

12 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

13 A. Yes.